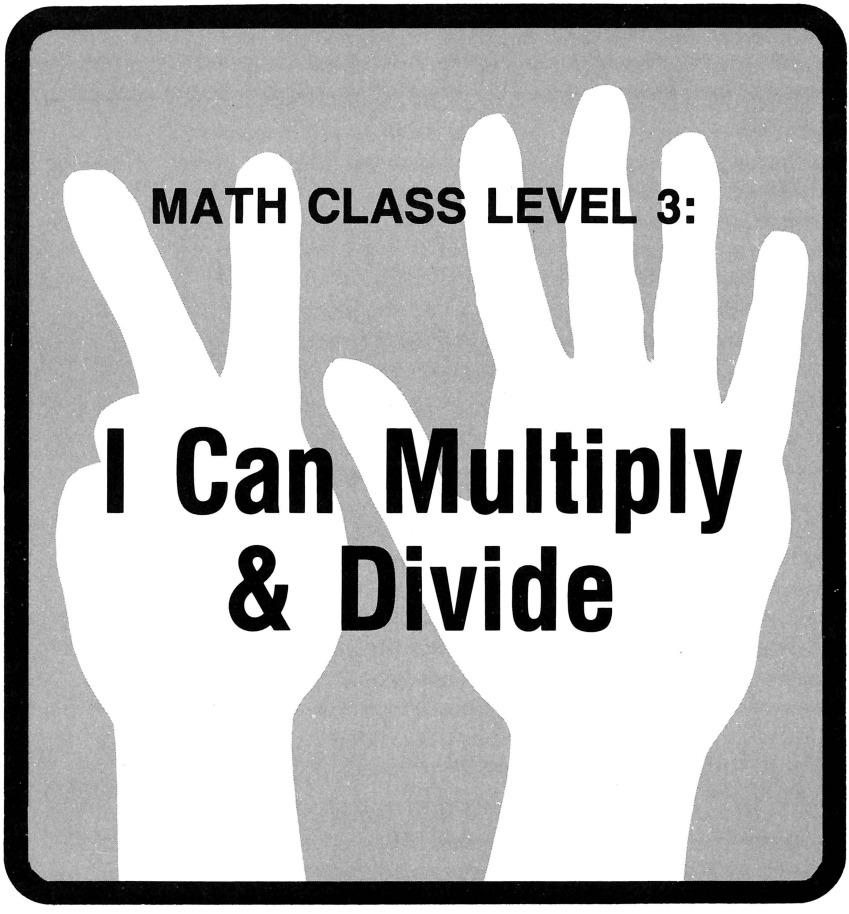
Troll MICRO

COURSEWARE

USER'S GUIDE



MATH CLASS LEVEL 3:

I Can Multiply & Divide

Troll Micro-Software

Troll Math Class
Level 3: I Can Multiply & Divide
Micro User's Guide

System Requirements

1. Apple IIGS, IIc, IIe, II+, or II (with Applesoft and at least 48K of RAM).
2. One disk drive.
3. A TV set or video monitor (color is recommended).

How to Use This Program

Troll Math Class is designed to introduce students to basic math skills in a format that is entertaining as well as educational. Each level focuses on a specific concept and includes a variety of activities to teach and reinforce that skill. **Level 3: I Can Multiply & Divide** introduces the concepts of basic multiplication and division, factors, remainders, and the inverse property of multiplication.

Getting Started

Insert the program disk into the disk drive with the label facing up and the oval cutout facing away from you. Close the door on the disk drive and turn on the monitor and computer. The red light on the disk drive will light up as the program loads.

NOTE: Some Apple computers require that PR#6 be typed before the program begins loading.

When the program has loaded, the Troll logo will appear, followed by the title. After the student types his or her name and indicates if sound is desired, the main menu appears:

1 Multiplying Magic
2 Hocus-Pocus Division
3 Magical Mystery Maze
4 Fraction Attraction

To choose an area of concentration, the student simply presses the number of that choice. If choice 4 is selected, the Fraction Attraction activity will load and run automatically. If choice 1, 2, or 3 is selected, the student must select a specific activity from a second menu:

Multiplying Magic Activity Menu

1 Funny Bunnies
2 Take a Bow
3 Mirror Magic

Hocus-Pocus Division Activity Menu

1 Spider Stew
2 Presto Chango
3 Magic Genie

Magical Mystery Maze Activity Menu

1 Multiplication
2 Missing Factors
3 Division
4 Multiplication and Division

The activity selected will then load and run automatically.

Special Keys

	H	Help
CONTROL	X	Return to Main Menu
CONTROL	O	Turn Sound On or Off

The Activities

Funny Bunnies (multiplying one-digit numbers)
In this activity, the student uses multiplication to find the total number of rabbits. First, the student enters the number of hats, then the number of rabbits in each hat, and then multiplies to find the total number of rabbits. The activity is repeated using cages and doves. After a total of 16 problems have been solved, the score is shown. The activity may be repeated.

Take a Bow (multiplying by 0 and 1)
First, the student is shown that any number times zero is zero, and any number times one is itself. Then, as multiplication problems are solved, pieces of a mystery picture are colored in. After 20 problems have been solved, the score is shown. The activity may be repeated.

Mirror Magic (inverse property of multiplication)
As the activity begins, the student sees a multiplication problem on a stage set with mirrors, and he or she enters the product of the factors. Then the positions of the factors are reversed, and the answer to the "new" problem is entered. After 8 problems have been solved, the score is shown. The activity may be repeated.

Spider Stew (relationship between multiplication and division)
A number of toads are arranged in sets. The program shows how many toads are in each set, as well as the total number of toads. The student fills in the missing factor in a multiplication problem. Then the equation is presented as a division problem, and the student fills in the quotient. Next, spiders appear instead of toads. After 12 problems have been solved, the score is shown. The activity may be repeated.

Presto Chango (principles of division)
In this activity, the student helps a magician catch his rabbits. A certain number of rabbits appear, and the student is told how many rabbits will fit inside each cage. After "caging" the rabbits, the student tells how many cages were needed. For variety, rabbits and cages are then replaced by mice and boxes. After 9 problems have been solved, the score is shown. The activity may be repeated.

(Continued)

Activities (Continued)

Magic Genie (division with remainders)	The program displays various numbers of genies and tells how many genies will fit into each bottle. The student then tells how many bottles can be filled, and proceeds to "bottle" the genies and to tell how many genies are left over. For variety, students also complete the activity by putting stars into crystal balls. After 10 problems have been solved, the score is shown. The activity may be repeated.
Magical Mystery Maze (various skills)	After choosing either fast or slow speed, the student tries to steer a car through a series of mazes by using the arrow keys or the U, D, L, and R keys (for Up, Down, Left, and Right.) If the car crashes against any of the walls of the maze, a problem is printed, and the student must solve it before continuing. After completing each maze, the student advances automatically to a new maze at a more difficult driving level. The game is over after 10 crashes, or after the student has successfully left the tenth maze.
Fraction Attraction (equivalent fractions)	Two identical shapes are shown, but each is divided into a different number of sections. A fractional part of the first shape is colored and identified, and the student must enter the equivalent fraction of the second shape. A brief explanation is printed on the screen if an incorrect answer is entered. After a second incorrect answer, the correct answer is provided. The two shapes then move toward each other until they merge, showing that the two fractions are identical. After 8 problems have been correctly answered, the score is shown. The activity may be repeated.

Care of Disks

The micro-software program is recorded on the magnetic coating of the program disk, which is permanently sealed inside a protective cover. Do not touch the surface of the disk that is visible through the oval cutout in the protective cover. When the disk is not in use, it should be returned to its own envelope and stored in a safe place away from dust, magnetic fields, and temperature and humidity extremes. Do not bend, staple, or write on the disk or its protective cover with ball point pen or pencil.

Warranty

Troll Associates provides a lifetime guarantee on Troll micro-software disks. If any program disk is accidentally damaged or ever fails to load or run, simply return it to us for a free replacement.

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